

UNITED STATES GENERAL ACCOUNTING OFFICE

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U.S. General Accounting Office

Before the Investigations and Review Subcommittee

Of The House Committee on Transportation and Public Works

Concerning the [Architectural Barriers Act of 1968]

October 7, 1975

Mr. Chairman and Members of the Committee:

I appreciate your invitation to discuss our report "Further Action Needed to make All Public Buildings Accessible to the Physically Handicapped."

At the outset I would like to state that the agencies included in our review have all generally agreed with our findings, accepted our recommendations, and have actions underway which are designed to improve the conditions described in our report.

Estimates of the number of physically handicapped people in the United States range from 18 to 68 million, depending mainly on how handicapped is defined. Although the severity of their handicaps vary, these individuals all have basic physical disabilities which restrict their daily activities. These disabilities include impairments that confine individuals to wheel-chairs or necessitate the use of braces or crutches; blindness or deafness which affects an individual's safe functioning in a public area; or decreased mobility resulting from aging, accident, or disease.

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If handicapped individuals cannot enter and use public buildings, they cannot easily vote, obtain government services, conduct business, or become independent and self-supporting. Efforts to enhance talents and market job skills become meaningless when the job site and usual places of business are inaccessible.

Accessibility of public buildings is essential if the handicapped are to have the same rights and opportunities as the able bodied in obtaining government services and employment outside their homes.

#### CONGRESS' EFFORTS TO ELIMINATE ARCHITECTURAL BARRIERS

By 1965, 24 States had taken some kind of legislative action to eliminate architectural barriers in public buildings. Much of the legislation was discretionary and not comprehensive in coverage. Too few public buildings were being constructed barrier free. There had been no concerted local efforts to activate an accessibility program. At the Federal level, no Government-wide order had been issued to insure elimination of barriers in the design and construction of federally assisted projects.

In 1965, Congress amended the Vocational Rehabilitation Act to expand the public program for rehabilitating the handicapped and authorized the National Commission on Architectural Barriers. The Commission grew out of a congressional desire to eliminate architectural barriers and to establish plans for further action.

In 1967 the Commission recommended to the Congress legislation requiring accessibility in all buildings leased or owned by the Government or constructed with Federal funds.

On August 12, 1968, the Congress enacted Public Law 90-480, known as the Architectural Barriers Act of 1968. The act's purpose was to insure that certain federally funded buildings were designed and constructed to be accessible to the physically handicapped.

Included in the act were federally financed buildings in which a physically handicapped person might live or work and buildings intended for public use. Privately owned residential structures and those on military installations to be used primarily by able-bodied military personnel were excluded.

Sections 2, 3, and 4 of the act authorized the Administrator of the General Services Administration (GSA) and the Secretaries of Housing and Urban Development (HUD) and Defense (DOD), each in consultation with the Secretary of Health, Education, and Welfare (HEW), to prescribe standards for the design, construction, and alteration of buildings.

Section 6 of the act authorized GSA, HUD, and DOD (1) to make whatever surveys and investigations deemed necessary to insure compliance with the standards and (2) to modify or waive the standards on a case-by-case basis upon application by the head of the agency involved.

The Architectural Barriers Act brought the Federal Government to the level of legislative initiative already reached in 1968 by 34 States.

Public Law 91-205, approved March 5, 1970, amended the Architectural Barriers Act to make it applicable to the Washington, D.C., Metro subway facilities now under construction. (Our review did not cover the Washington Metro subway facilities.)

Section 502 of the Rehabilitation Act of 1973 created an Architectural and Transportation Barriers Compliance Board.

The Board's functions include:

- Insuring compliance with the standards prescribed by GSA, DOD, and HUD pursuant to the Architectural Barriers Act.
- Initiating investigations on the nature of architectural, transportation, and attitudinal barriers confronting the handicapped, particularly with respect to public buildings and monuments, parks and parklands, public transportation systems, and residential and institutional housing.
- Considering the housing needs of the handicapped.
- Determining how and to what extent transportation barriers impede the mobility of the handicapped and considering ways in which their travel expenses to and from work can be met or subsidized.
- Determining the actions being taken by other governmental units and public and nonprofit agencies and preparing proposals for consolidating the efforts of agencies, organizations, and groups whose cooperation is essential for effective and comprehensive action.
- Conducting investigations, holding public hearings, and issuing such orders as it deems necessary to insure compliance with the act's provisions.
- Making recommendations to the President and to the Congress for administration and legislation as deemed necessary or desirable to eliminate architectural, transportation, and attitudinal barriers to the handicapped.

The Board was established as an independent body composed initially of eight agencies--HEW; HUD; GSA; the Departments of the Interior, Labor, and Transportation; the Veterans Administration; and the Postal Service--with no single agency as head. On December 7, 1974, section 502 was amended by section III of the Rehabilitation Act Amendments of 1974 to:

- Make DOD a Board member.
- Make the Secretary, HEW, or his designee, Chairman of the Board.
- Give the Board authority to appoint a consumer advisory panel, a majority of whose members would be handicapped, to give the Board guidance, advice, and recommendations.
- Give the Board authority to withhold or suspend Federal funds to any building found not to be in compliance with standards prescribed pursuant to the Architectural Barriers Act, as amended.

We did not make an in-depth review of the Board's activities because, at the time of our review, the Board had just begun to function.

By 1974 all 50 States and the District of Columbia had, through legislation, executive directives, or building codes, required the elimination of architectural barriers in public buildings.

#### AGENCIES ADOPT THE ANSI STANDARD

The American National Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped (referred to as the ANSI Standard) was developed by the President's Committee on Employment of the Handicapped, the National Society for Crippled Children and Adults, and various Federal and private agencies and was field tested by

disabled students from the University of Illinois. On October 31, 1961, the American National Standards Institute, established to coordinate the development of voluntary national standards, issued the ANSI Standard. The Standard was distributed throughout the United States by various organizations, including the National Easter Seal Society for Crippled Children and Adults.

The ANSI Standard sets forth minimum design requirements for 16 different aspects of a building--such as grading, parking lots, walks, entrances, doors and doorways, and restrooms--to make it accessible and functional for the physically handicapped without loss of function or space for the general public.

The Department of Defense; General Services Administration; the Department of Health Education and Welfare; and the Department of Housing and Urban Development had taken some action to make buildings accessible to the physically handicapped before the act was passed.

DOD advised the Army, Navy, and Air Force early in 1962 to incorporate ANSI Standard provisions into designs and specifications for new buildings and facilities and into major modifications wherever appropriate and feasible. DOD took no further action after the act was passed because it believed existing criteria, which cited the ANSI Standard, were sufficient to implement the act.

Since the late 1950's GSA design criteria has provided for wheelchair access to its buildings. The design criteria incorporated some features of

the ANSI Standard, but was less comprehensive than the Standard. In September 1969, GSA adopted the ANSI Standard in total and made it applicable to all construction under its responsibility.

In 1965, HEW incorporated the ANSI Standard in its construction manual, making it applicable to all construction under its responsibility.

HUD distributed copies of the ANSI Standard to Department and regional offices in March 1962. However, HUD did not make the Standard mandatory until October 1969.

#### SCOPE OF REVIEW

The scope of our review included an inspection of 314 federally financed buildings or building plans in 35 states and the District of Columbia. We tried to achieve regional and agency balance and, as much as possible, buildings were randomly selected.

We performed inspections from July through December 1974, using a checklist based on the ANSI Standard to judge the buildings. All buildings which we physically inspected were constructed, altered, or leased after enactment of the Architectural Barriers Act in August 1968.

Although more than 30 Federal agencies have construction and leasing authority and/or authority to fund construction through grants and loans, our review was limited to GSA, HUD, DOD, and HEW, which were given statutory responsibilities under the act.

To determine whether these agencies effectively administered the act, we assessed the

- clarity and adequacy of policy guidance and instructions,
- action taken in prescribing standards for making buildings accessible,

- procedures for modifying or waiving the prescribed standards, and
- procedures for reviewing and evaluating compliance with the prescribed standards.

We discussed the problem of accessibility in public buildings and the ANSI Standard with physically handicapped persons, architects, and representatives of national and local organizations for the handicapped.

In addition, we developed information on the cost of making buildings barrier free.

#### RESULTS OF GAO'S INSPECTIONS

The Architectural Barriers Act has had only a minor effect on making public buildings barrier free. Specifically:

- No building inspected was completely free of barriers; however, most buildings were in varying stages of compliance with the ANSI Standard.
- Restrooms; controls for heat, air-conditioning, and lighting; identifications of building areas; elevators; parking lots; and doors and doorways most often did not conform to the ANSI Standard.
- Buildings currently being designed and constructed are only slightly more barrier free than buildings designed and constructed within the years immediately after passage of the act.
- Federally owned buildings had better facilities for the physically handicapped than federally leased buildings.

Major barriers found from the parking lots to the building entrances included streets to cross, high curbs to negotiate, and steps to climb.



Inside the buildings, major barriers included restrooms with unusable toilet stalls, water fountains that were too high, and elevators with controls beyond the reach of the physically handicapped.

#### DEFICIENCIES OF THE ACT

The Architectural Barriers Act has several language deficiencies which have lessened its effectiveness.

The act left implementing action to the discretion of the named agencies. It authorized the agencies to prescribe whatever standards were necessary to assure access to handicapped persons, to waive the standards on a case-by-case basis, and to make surveys and investigations deemed necessary to assure compliance with established standards. These provisions amounted to a delegation of authority to carry out the congressional intent of the act rather than a statutory mandate. The determination of the standards' content, waiver of the established standards, or nature or number of surveys is purely discretionary. We believe that the lack of success by GSA, HUD, DOD, and HEW in removing architectural barriers has resulted at least in part from the permissiveness of the act's terms.

Another deficiency in the act is its definition of "building."

The definition specifically excludes any privately owned residential structure. Therefore, privately owned buildings leased to the Government for public housing are not covered. HUD regulations, issued pursuant to section 3 of the act, also exclude privately owned residential structures leased for public housing.

Section 1(2) excludes from coverage those buildings and facilities leased by the Government which have not been constructed or altered pursuant to U.S.-drafted plans and specifications. Since the Government leases many existing buildings without substantial alteration, the act's coverage is incomplete to the extent that those buildings are excluded.

Section 1(3) states that the Architectural Barriers Act is applicable only where the statutory authority for the grant or loan in question imposes standards on the recipient for the design, construction, or alteration of Government-financed buildings or facilities. Therefore, buildings and facilities designed, constructed, or altered with revenue sharing funds appear to be exempt from the act, since the authorizing statute (State and Local Fiscal Assistance Act of 1972), does not impose any of the above-mentioned conditions.

Many buildings and facilities whose construction is financed through Federal grant-in-aid programs are exempted from the act by section 1(3) since the statutes authorizing the grants do not require the recipients to adhere to standards for the design, construction, or alteration of buildings and facilities. For example, the Housing and Community Development Act of 1974 authorizes the Secretary of HUD to make grants to States and local governments to help finance community development programs. Section 105 of the act provides that a program may include "(5) special projects directed to the removal of material and architectural barriers which restrict the mobility and accessibility of elderly and handicapped persons." The act does not

require, however, that buildings financed by such grants be subject to any particular standard for promoting accessibility to handicapped persons or to any other Government-required design or construction standards; hence, the Architectural Barriers Act does not apply.

Section 5 of the act requires that alterations conform to the standards prescribed under the act; however, the act does not require alterations to be made specifically to accommodate the handicapped. There is no requirement for making the total building or area under alteration accessible pursuant to the act's standards.

The Postal Reorganization Act of 1970 exempted the newly created Postal Service from application of any Federal law dealing with public or Federal contracts and property except for those specifically enumerated in 39 U.S.C. 410(b). Section 410(b) does not list the Architectural Barriers Act.

The Postal Service has issued a regulation requiring compliance with the ANSI Standard. This administrative action is commendable. However, the legislative history of the Architectural Barriers Act indicates that the Congress intended that Post Office buildings and facilities be covered by the act. Further, the Rehabilitation Act of 1973 established the Architectural and Transportation Barriers Compliance Board with the Postal Service as one of its eight members. Accordingly, we believe the U.S. Postal Service should be subject to a statutory requirement, particularly since Post Office buildings are probably used more frequently by the public than any other Government buildings.

## DEFICIENCIES OF ANSI STANDARD

Even though the ANSI Standard was prescribed by each Federal agency and represents an important step toward promoting accessibility in public buildings, it is generally considered an incomplete, minimum standard.

- It defines the various categories of accessibility but lacks specificity in certain important areas, which results in varying interpretations of its specifications.
- It does not specify what facilities are to be covered and to what extent its specifications should be followed.
- It does not cover residential housing.
- It contains very few descriptive drawings.

Most of these inadequacies have been recognized and actions are in process to update or arrive at new standards. However, almost 7 years after passage of the Architectural Barriers Act, the ANSI Standard is still being followed with only minor administrative exceptions.

### Recent efforts to revise and develop accessibility standards

In June 1974 HUD contracted for revision and expansion of the ANSI Standard, including development of specifications for residential housing. The contract was let to Syracuse University and is expected to be complete by June 1976.

GSA has contracted for interim standards to replace the ANSI Standard in its Federal Property Management Regulations (not a revision of ANSI) until more complete standards can be developed.

An HEW handbook, "Design of Barrier Free Facilities," published in January 1975 and issued to HEW's agencies and regional offices, embodies the ANSI Standard and expands its requirements.

#### COSTS OF ELIMINATING ARCHITECTURAL BARRIERS

Government, private contractor, and design personnel agree that the cost of accessibility features is negligible when such items are incorporated in the design phase; sometimes, it may even result in cost savings. In addition, although the cost of altering existing inaccessible buildings is more than that of initial barrier-free construction, it is relatively small when compared to total construction cost.

In February 1973 the then Acting Commissioner, Public Buildings Service, GSA, stated that barrier-free buildings can be provided at little or no additional cost, and sometimes at less cost, when the architect is aware of the needs of the handicapped and takes them into account in initial plans. He further stated that alterations to existing buildings to eliminate architectural barriers will involve additional cost depending on the extent of the alterations.

HEW's technical handbook "Design of Barrier Free Facilities," contains the following pertaining to cost:

"In most new construction, the additional cost of making a facility barrier-free is negligible and should not interfere with application of the standards. The remodeling of existing structures does involve additional costs which vary widely.  
\* \* \* The value to society of having the disabled population more fully independent and usefully employed outweighs the cost of making facilities accessible."

Costs to Eliminate Barriers  
Initially and by Alteration

Although particular items designed for the handicapped cost more than conventional items, cost differences can disappear during construction. For example, a 36-inch-wide door usually costs more than a 30-inch-wide door; however, installing the wider door creates an offsetting decrease in adjacent partitioning costs. On the other hand, some buildings are constructed with massive entrances on a raised podium with steps. Such an entrance is inaccessible as well as costlier than a level, more accessible entrance.

Detailed cost data can only be determined on a case-by-case basis because it must be related to the requirements and conditions of each project. However, a cost study by the National League of Cities and a discussion with a Government official showed that the additional cost for accessibility features included in the original construction program may only be one-tenth of 1 percent of total construction cost.

Government estimators provided us with the current cost of converting selected buildings to conform to the ANSI Standard, as well as the added cost if the buildings had originally complied with the Standard. A comparison of the cost of making buildings accessible, compared to total project cost showed that such cost is relatively small. The percentages to alter an existing building to comply with the ANSI Standard ranged from 2.4 percent to .06 percent of the project cost. However, the cost is even less when accessibility features are incorporated into the original construction program. In all instances, they amounted to less than 1 percent of total project cost.

## GENERAL SERVICES ADMINISTRATION

Our review of the effectiveness of GSA's implementation and administration of the Architectural Barriers Act of 1968 disclosed:

- GSA did not amend its regulations to require Federal agencies to comply with the ANSI Standard until about 13 months after passage of the act.
- GSA regulations provided that the Standards would not apply to the construction or alterations of a building for which bids have already been solicited or plans and specifications had been completed or substantially completed on or before September 2, 1969. To implement this provision GSA would have had to determine whether the act applied to buildings under design as of September 2, 1969. We found no evidence that such determinations were made.
- GSA's policy on alterations was unclear and subject to interpretation by regional officials. Accordingly, alterations were being made which resulted in piecemeal removal of architectural barriers and accessibility in one area being negated by barriers in another area.
- Most Government-leased space was not required to comply with the ANSI Standard.
- Architects and engineers designing new buildings and altering existing ones were not required to use ANSI Standards until May 1971.
- GSA's design data and various other standard guide specifications furnished to architects and engineers conflicted with some portions of the ANSI Standard.

--GSA's design review did not insure compliance with the ANSI Standard.

--A survey and investigation system was not established by GSA to insure agency compliance with the ANSI Standard.

#### DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HUD has not developed policy criteria that realistically reflect the act's intent and the needs of potential handicapped residents. The prescribed standard HUD adopted states that it does not apply to residential structures; however, HUD regulations state that they apply only to the extent provided in the standard. This raises a question as to whether HUD regulations established any binding requirements regarding barrier removal in publicly owned residential structures. In this regard, HUD offices were granting waivers without the proper authority.

Essential to a barrier-free housing policy is the need for clearly worded regulations which leave little doubt as to the operating procedures. HUD's regulations define residential structures for the handicapped in such a way that the standards adopted to make buildings barrier free would only apply to buildings designed for the elderly and then only to 10 percent of those units. The result has been that the number of accessible living units is limited and multifamily dwellings with more than one bedroom per unit are constructed without regard to barrier removal. Handicapped persons with families, therefore, are effectively excluded regardless of their financial eligibility.

Also, criteria furnished to architects and engineers conflicted with the ANSI Standard, and there were no controls and procedures in the design of buildings to insure compliance with the act. HUD seems to be overly dependent on private architects to insure barrier-free design.



HUD area offices have not maintained required project files pertaining to compliance with the act. As a result, determinations of publicly owned housing intended for occupancy by the physically handicapped were not being made and appropriate files to permit surveys and investigations did not exist.

#### DEPARTMENT OF DEFENSE

DOD's implementation of the act has generally been limited to issuing its policy statement, adopting the ANSI Standard in its construction criteria manual, and instructing the military services to incorporate provisions of the Standard into design and specifications for new buildings and facilities.

DOD has not obtained reports on the implementation of its instructions or made reviews of the services' compliance with the Standard.

The construction agencies in DOD, the Corps, and the Navy have not established specific procedures to advise architects of the need to comply with the ANSI Standard and for reviewing plans and specifications to determine compliance with the Standard.

The Navy's policy before April 18, 1975, was ambiguous, giving the impression that compliance with the Standard was at most a secondary consideration.

#### DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

HEW's responsibilities under the Architectural Barriers Act were to consult with and assist agencies with the development of standards to make buildings accessible to the physically handicapped and to comply with standards developed by GSA in HEW's own construction and grant programs.

In its role as consultant, HEW assisted GSA, HUD and DOD in developing and implementing regulations which incorporated the ANSI Standard. Subsequently, in 1973, HEW recognized that the Standards adopted shortly after passage of the act required some revision--as evidenced by new HEW accessibility standards published in a technical handbook. However, HEW did not request the agencies with primary responsibility for accessibility standards to take action to revise standards prescribed to implement the act.

GSA's implementing regulations require that:

- Buildings be designed in accordance with the ANSI Standard.
- Only the Administrator, GSA, may waive the act's prescribed standards.
- Each agency head establish a documentation system providing certification in each contract or grant file on the project's compliance with the act.

HEW has failed to establish procedures to comply with all of these requirements.

#### RECOMMENDATIONS

We have recommended that the Congress amend existing legislation to:

- Impose a clear statutory mandate that Federal agencies named in the Architectural Barriers Act insure that public buildings are made accessible to the physically handicapped.

- Include within the act all Government-leased buildings and facilities intended for public use or in which the physically handicapped might be employed as well as all privately owned buildings leased to the Government for public housing.
- Require that agencies named in the act establish a system of continuing surveys and investigations to insure compliance with prescribed standards.
- Remove the present exemption of the U.S. Postal Service from coverage under the Architectural Barriers Act.

Specific language for clarifying the Federal laws was provided in our report.

We also recommended that the Architectural and Transportation Barriers Compliance Board coordinate the development of standards by each agency charged with construction responsibility to eliminate barriers to the physically handicapped in federally financed buildings.

Our report also recommended further action by the Administrator, GSA; the Secretary, HUD; the Secretary of Defense; and the Secretary, HEW to correct shortcomings disclosed by our review. These recommendations included:

- clarifying and improving the standards for eliminating barriers and making them more relevant to the agencies' construction responsibilities,
- establishing appropriate controls to insure that buildings are designed and constructed barrier free,

- establishing a survey and investigation system as authorized by section 6(2) of the act to enforce compliance with the prescribed standards, and
- enforcing lease contract provisions requiring leased buildings to be accessible to the physically handicapped.

RESULTS OF OUR INSPECTIONS

The ANSI Standard sets forth minimum design requirements for 16 different aspects of a building--such as grading, parking lots, walks, entrances, doors and doorways, and restrooms--to make it accessible and functional for the physically handicapped without loss of function or space for the general public.

Using ANSI Standard criteria we measured the progress of GSA, DOD, HUD, and HEW in achieving barrier-free buildings by inspecting 314 buildings constructed, altered, or leased after passage of the act. The following information has been summarized from checklists completed during our inspections. All buildings were not evaluated for every category because certain categories were not applicable to some buildings or undeterminable from building plans. For example, not every building had public telephones, ramps, etc., and some building plans did not show the exact height of every fixture.

Site development

## Grading:

--8 percent of the buildings did not have proper grading permitting access to normal entrances by the physically handicapped.

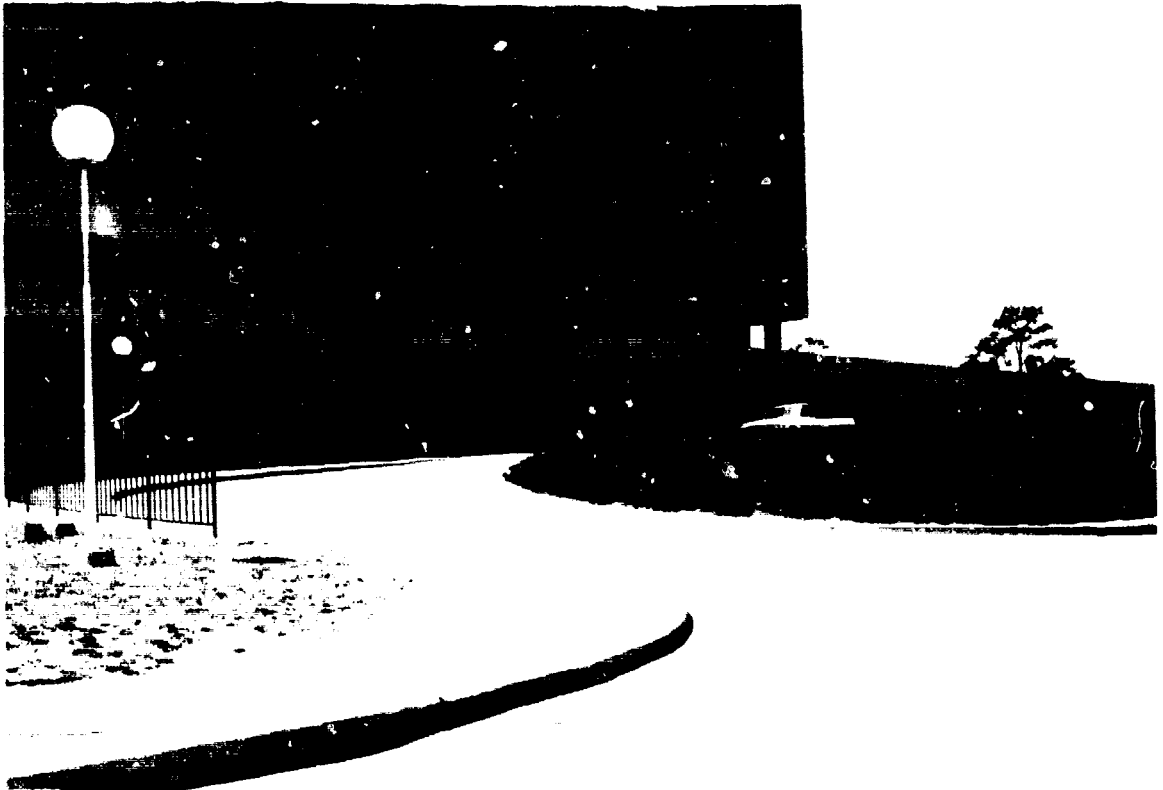
Walks:

--11 percent of the buildings had walks with gradients exceeding 5 percent,

--36 percent of the walks did not blend to a common level whenever they crossed other walks, driveways, or parking lots, and

--16 percent of the walks did not have adequate platforms at entrances to buildings.

Following are illustrations of typical walk conditions we observed.



NAVAL HOSPITAL--CHARLESTON, S.C.

Curb and walk at rear of building, serving several thousand outpatients a month, that would limit access to building (elevation of walk exceeds 5 percent).



**GOVAN'S MANOR--HIGHRISE FOR THE ELDERLY--BALTIMORE, MD.**  
**Walk with a 2-inch curb and a gradient exceeding 10 percent precludes wheelchair traffic.**

## Parking lots:

- 79 percent of the buildings did not have parking with spaces designated for the physically handicapped,
- 79 percent of the parking was located where the physically disabled had to wheel or walk behind parked cars, and
- 51 percent of the parking did not have a clear, level path (void of curbs) from the parking lot to the building entrance.

The following photographs depict typical parking lot conditions.

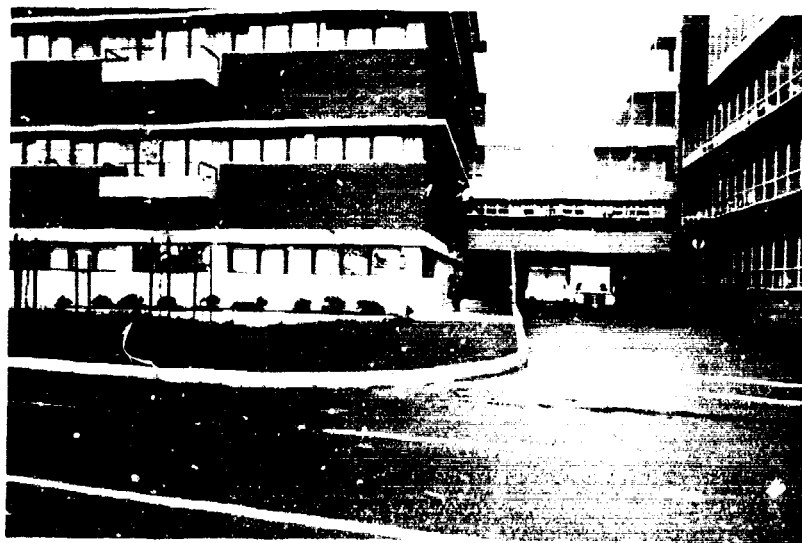
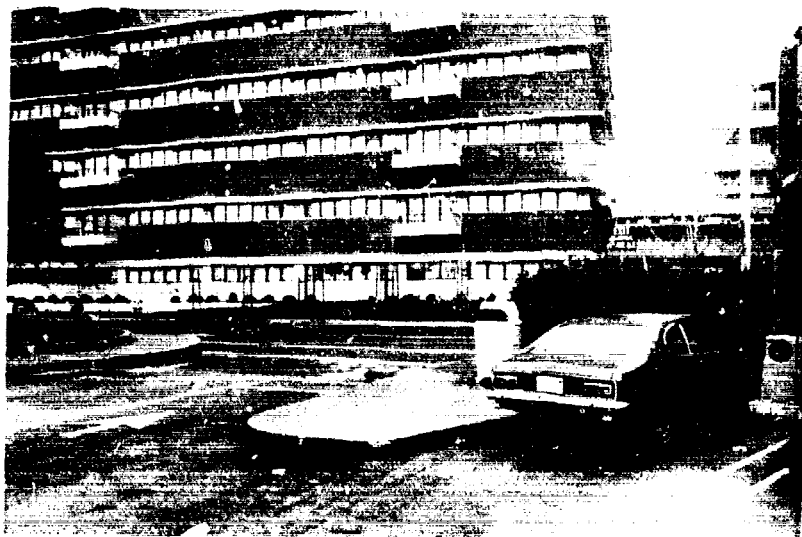


NAVAL HOSPITAL-NEW LONDON, CONN.  
Ramp with curb from parking lot to building emergency entrance.



HARBORVIEW COMMUNITY MENTAL HEALTH CENTER-SEATTLE, WASH.  
Steps preclude access from rear parking lot to rear entrance.





**HEALTH SCIENCES BUILDING--SCHOOL OF DENTISTRY--UNIVERSITY OF WASHINGTON--  
SEATTLE, WASH.**

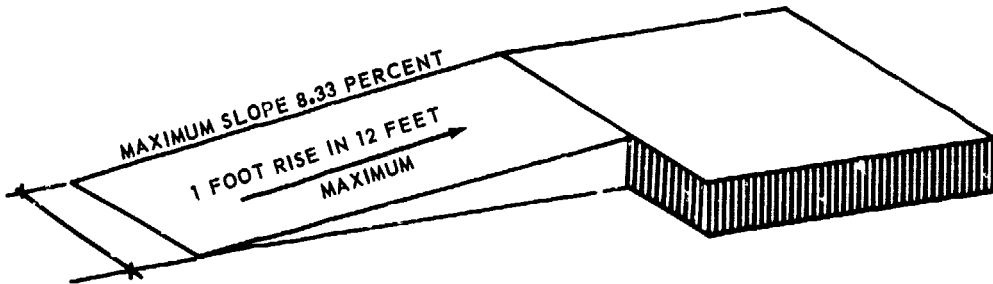
**A three-lane road and a 9-inch curb preclude access to the building from the parking lot.**

## Buildings

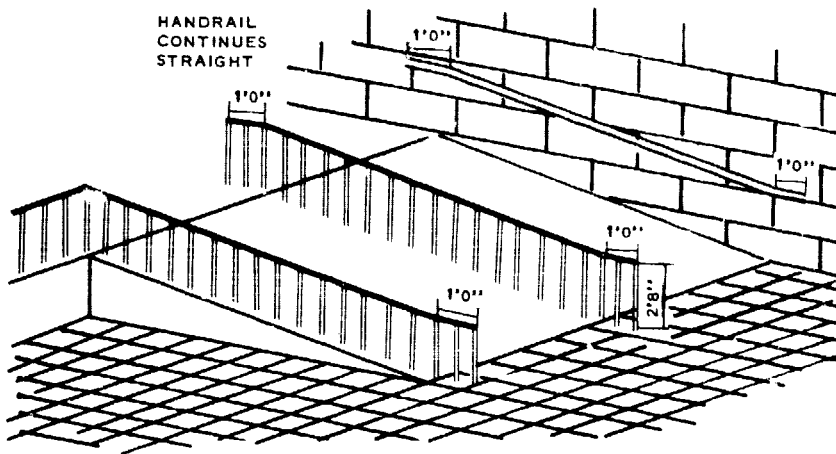
### Ramps:

- 26 percent of the buildings had ramps with a slope exceeding 8.33 percent,
- where the gradient exceeded 5 percent, 35 percent of the ramps did not have handrails on or at least one side,
- of the 65 percent providing handrails, 67 percent were not at the proper 32 inch height,
- 73 percent of the handrails did not extend 1 foot beyond the top and bottom of the ramp, and
- 61 percent did not provide rest areas at 30-100 foot intervals when the grade exceeded 5 percent.

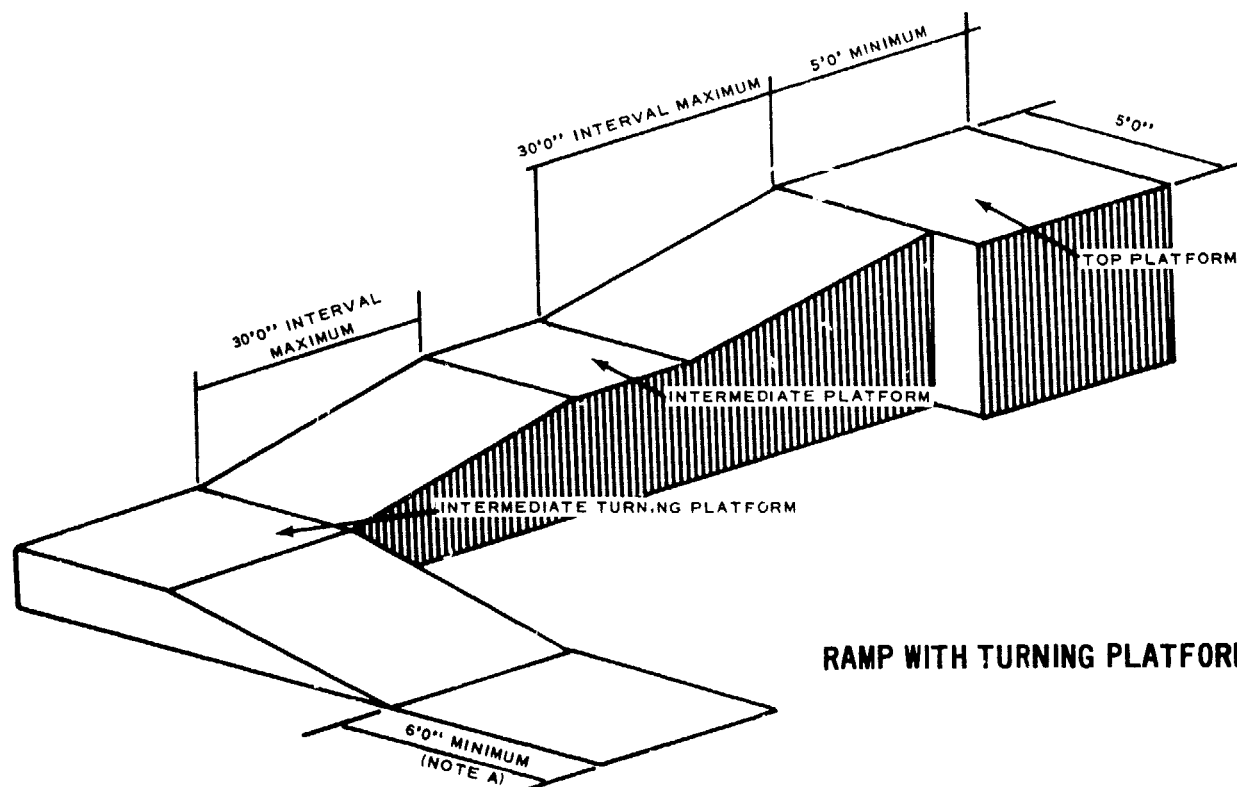
Following are illustrations of ramps that comply with the ANSI Standard.



**RAMP WITH CORRECT SLOPE**



**RAMP WITH APPROPRIATE HANDRAILS**



**RAMP WITH TURNING PLATFORM**

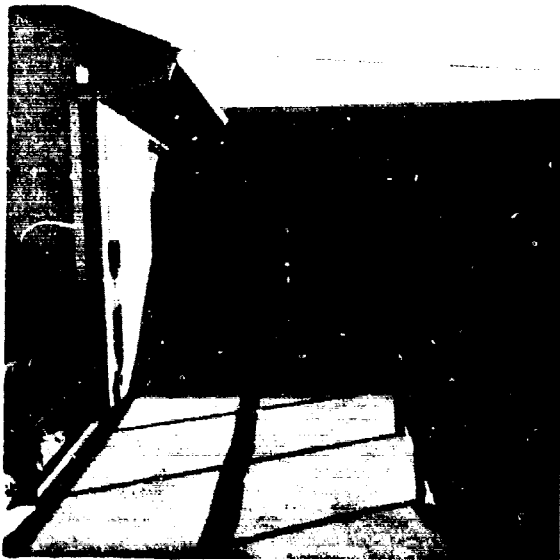
FROM "AN ILLUSTRATED HANDBOOK OF THE HANDICAPPED SECTION OF THE NORTH CAROLINA STATE BUILDING CODE." ILLUSTRATIONS COPYRIGHT 1974 BY RONALD L. MACE. PERMISSION GRANTED FOR USE.

<sup>A</sup> THE NORTH CAROLINA BUILDING CODE REQUIRES 5' 0" MINIMUM CLEARANCE AT THE BOTTOM OF THE RAMP, WHEREAS THE ANSI STANDARD REQUIRES 6' 0" MINIMUM CLEARANCE.

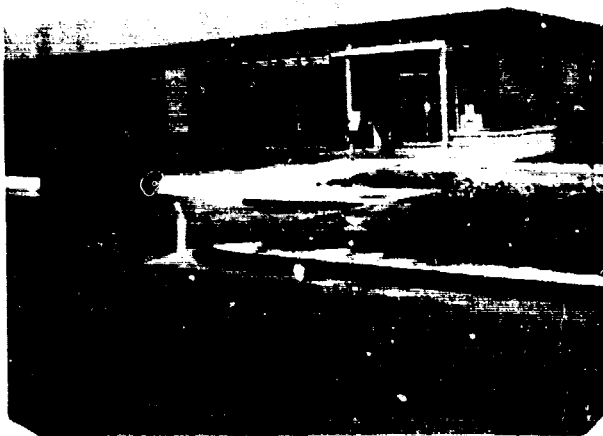
**Entrances:**

--24 percent did not have at least one entrance usable by persons in wheelchairs.

The following photographs show unusable entrances.



**PHARMACY/IMMUNIZATION CENTER--FORT MACARTHUR--SAN PEDRO, CALIF.**  
Steps at front entrance and the absence of a level platform at rear entrance preclude access to building.



**U.S. POST OFFICE--FT. GORDON, GA.**  
Entrance not usable by persons in wheelchairs because of steps.

### Doors and doorways:

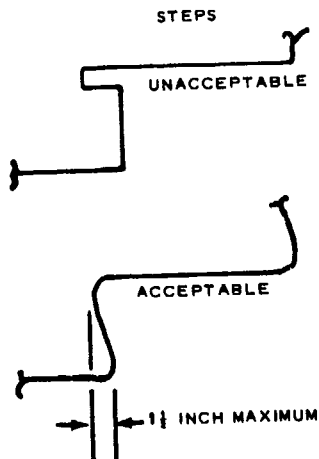
- 26 percent of the buildings had doors with less than a 32-inch clear opening.
- 16 percent had doors that were not operable by a single effort, and
- 12 percent had doorsills with sharp inclines or abrupt changes in level.

### Stairs:

- 27 percent of the buildings had steps with abrupt nosing,
- 64 percent had steps without 32 inch high handrails, and
- 20 percent had steps exceeding 7 inches in height.

Steps must be designed to preclude abrupt nosing which can trip individuals with artificial legs, long leg braces, or comparable restrictions.

The following illustrates acceptable and unacceptable



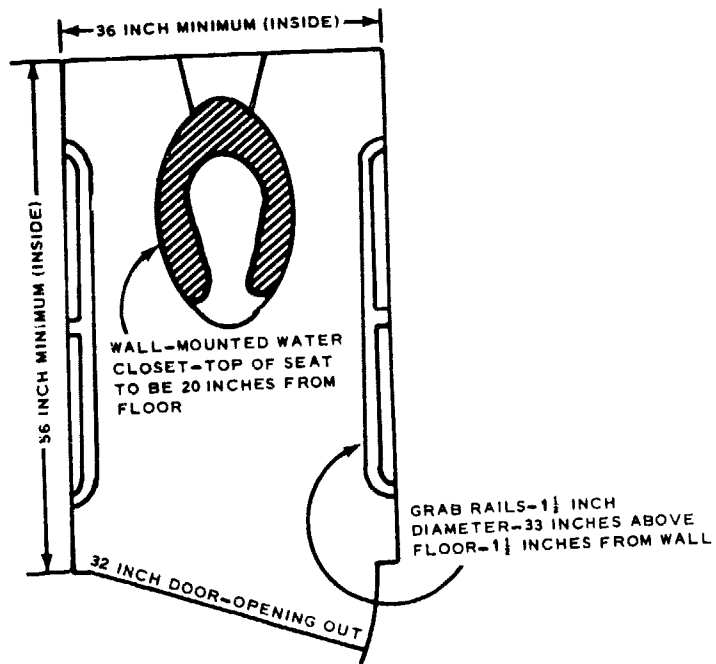
Floors:

- 17 percent of the buildings had floors with slippery surfaces and
- 4 percent had floors where there was a difference in level between the corridor and adjacent rooms.

Restrooms:

- 35 percent of the buildings did not have a least one restroom for each sex on each floor with facilities for the physically handicapped,
- 38 percent had restrooms that did not have ample turning space of 60-by-60 inches at door entrances for wheelchair traffic.
- 36 percent had restrooms that did not have toilet stalls at least 3 feet wide,
- 18 percent had restrooms that did not have toilet stalls at least 4 feet, 8 inches deep,
- 62 percent had restrooms with toilet stall doors less than 32 inches wide that did not swing out,
- 58 percent had toilet stalls with incorrectly mounted grab bars,
- 69 percent had toilets with water closet seats that were not 20 inches from the floor,
- 76 percent did not have lavatories usable by individuals in wheelchairs, and
- 74 percent did not have restrooms with at least one mirror mounted no higher than 40 inches; 64 percent did not have a least one shelf in the restroom mounted as low as 40 inches; and 90 percent did not have a towel dispenser mounted no higher than 40 inches from the floor.

The following illustrates a toilet stall for use by the handicapped that complies with the ANSI Standard.



#### Water fountains:

--34 percent of the buildings did not have at least one accessible water fountain on each floor and

--77 percent had wall-mounted water fountains higher than 36 inches.

Public telephones:

--63 percent of the buildings did not have at least one accessible public telephone in each bank of telephones and

--99 percent did not have telephones equipped for persons with hearing disabilities.

An example of an accessible telephone equipped for persons with hearing disabilities is shown below.



UNIVERSITY OF NORTH FLORIDA-JACKSONVILLE, FLA.  
Lowered telephone equipped for persons with hearing disabilities.



#### Elevators:

- 5 percent of the multiple-story buildings did not have elevators,
- 73 percent had elevators with call buttons higher than 48 inches from the floor,
- 95 percent had elevators with control buttons inside the elevators higher than 48 inches, and
- 47 percent had elevators with a cab size less than 60-by-60 inches.

#### Controls:

- 73 percent had controls (switches, fire alarms, thermostats, etc.) located more than 48 inches above the floor.

#### Identification:

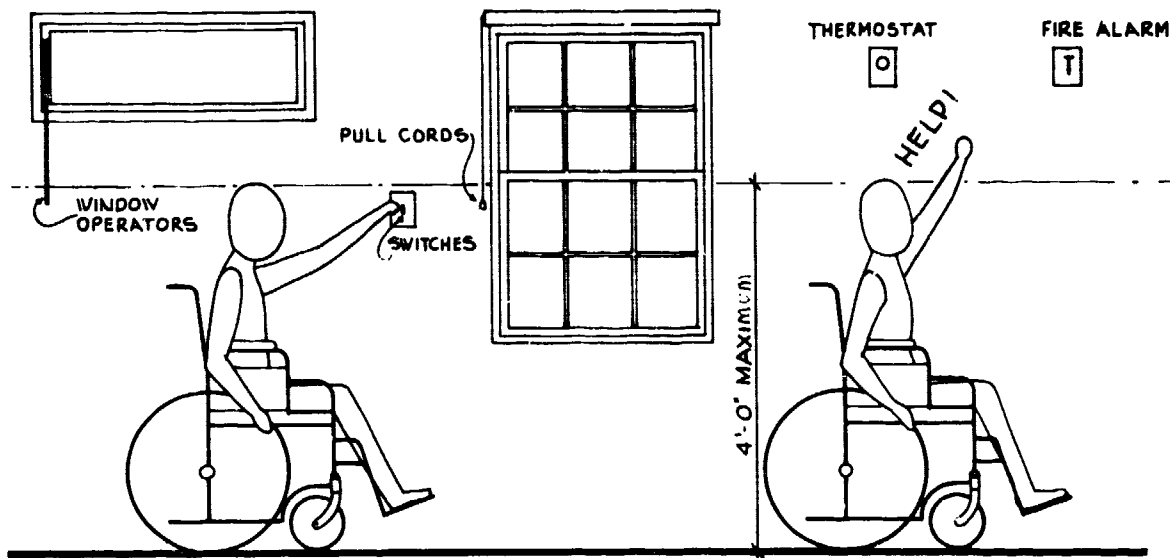
- 42 percent did not have raised or recessed letters or numbers to identify offices or rooms for the blind.

#### Warning signals:

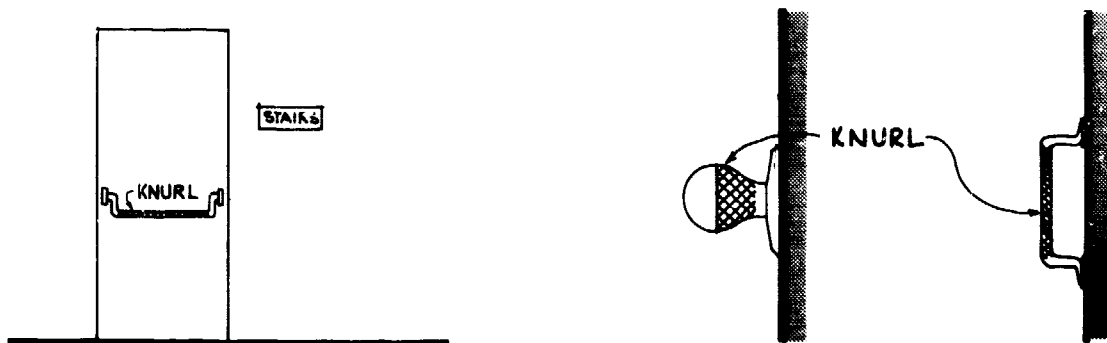
- 89 percent did not have simultaneous audible and visual warning signals.

#### Hazards:

- 86 percent did not have knurled door knobs to warn blind persons of dangerous areas.



**ILLUSTRATIONS OF APPROPRIATE CONTROLS, IDENTIFICATION, AND WARNING OF HAZARDS**



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